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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/600,295	<b>Applicant(s)</b> WU ET AL.	
	<b>Examiner</b> Anh-Vu H. Ly	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 13-40 and 42-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 13-40 and 42-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

1. This communication is in response to Applicant's amendment filed October 31, 2007.  
Claims 1-10, 13-40, and 42-50 are pending.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. Claims 1-10, 14-24, 39-40, and 42-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johansson et al (US Pub 2002/0089968 A1) in view of Petty et al (US Pub 2003/0108172 A1). Hereinafter, referred to as Johansson and Petty.

With respect to claims 1 and 39, Johansson discloses a communication system (Fig. 2), comprising:

a circuit switched network (Fig. 2, circuit-switched connection between wireless communication 20 and SMS-C 40);

a packet switch data network configured to assign network addresses in a dynamic fashion (page 6, 57<sup>th</sup> paragraph and Figs. 1-2, the application requests the GSM/GPRS network 10 to activate a packet data service to be used by the GPRS station 20 and then receives a dynamically allocated IP address from GSM/GPRS network 10 via GSM/GPRS network);

a client device configured to send and receive packet switched and circuit switched communications over the packet switched data network and the circuit switched data network, respectively (Fig. 2, wireless communication station 20); and

a central authority configured to send a circuit switch message to the client device through the circuit switched data network requesting that the client device register with the central authority through the packet switch data network (page 5, 55<sup>th</sup> – 56<sup>th</sup> paragraphs, the server 30 connects to the Short Message Service Center (SMS-C) and submits a request to the SMS-C 40 to transmit an SMS short message to a GPRS mobile station 20 having a particular Mobile Station Integrated Services Digital Network (MSISDN) number. The SMS-C 40 sends an SMS message to the GPRS station 20 through the GSM/GPRS network 10 over a GSM signaling channel. Herein, the GSM signaling channel is a circuit-switched signaling channel),

wherein the client device is further configured to include a packet switched network address with a packet switched registration message sent to the central authority (page 6, 58<sup>th</sup> paragraph and Fig. 2, the GPRS application prepares a response message to be transmitted to the server 30. The response message is transmitted over the established TCP/IP connection. Herein, the response message included the allocated IP address of the wireless communication station 20 when it activates a PDP context).

Johansson does not disclose that the client device sends a new packet switched registration message whenever the packet switched data network assigns the client device a new packet switched network address.

Petty discloses that the ICW client software application preferably re-registers with the ICW registration server at regular intervals. The re-registration time interval may be set, for

example, to occur at intervals of 10-20 minutes. If the ICW client computer 110 loses Internet connectivity during an ICW session, as soon as the Internet connection has been re-established, the ICW registration server 152 is updated with the new IP address of the ICW client computer 110 (page 4, 38<sup>th</sup> paragraph. Herein, the client automatically reregisters its new assigned IP address with the registration server).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include the feature of updating the new IP addresses in Johansson's system, as suggested by Petty, thereby data communications can be transmitted continuously when the client is out-of-coverage area or the currently assigned IP address expires or when a connection is re-established.

With respect to claim 2, Johansson discloses that wherein the circuit switch message sent to the client device is a short message service message (Fig. 2, SMS short message is used as a request).

With respect to claim 3, Johansson discloses that wherein the central authority is further configured to receive a packet switched registration message from the client device in response to the circuit switched message sent to the client device (page 6, 58<sup>th</sup> paragraph and Fig. 2, arrow 4, the GPRS application prepares a response message to be transmitted to the server 30. This response message is now transmitted over the established TCP/IP connection).

With respect to claims 4, Johansson discloses that wherein the central authority is further configured to extract a packet data network address associated with the client device from the packet switch registration message received from the client device (page 6, 59<sup>th</sup> paragraph, the server application extracts and analyses the included information in the response message. Herein, the message is TCP/IP message therefore it includes the allocated IP address of the GPRS station 20 when it activates a PDP context).

With respect to claim 5, Johansson discloses that wherein the central authority comprises a database configured to store information related to the client device and wherein the central authority is configured to update the data stored in the database based on the information contained in the received packet switched registration message (Fig. 2, the server 30 includes memory 33 and 34 for storing information relating to the GPRS station 20, including any updated network address of the GPRS station 20).

With respect to claim 6, Johansson discloses that wherein the central authority is further configured to update the information stored in the database on the packet data network address extracted from the received packet switch registration message (page 6, 59<sup>th</sup> paragraph and Fig. 2, the server application extracts, analyses, and stores the included information in the response message in server's memory).

With respect to claim 7, Johansson discloses that wherein the central authority is further configured to send a message to the client device using the packet data network address stored in

the database (Fig. 1, the server 30 sends a request to the GPRS station 20 via TCP/IP connection 1. Herein, the server already knows the network address of the GPRS station 20 as stored in its database 33 and 34).

With respect to claims 8-9, Johansson discloses that wherein the central authority is further configured to send the circuit switched message to the client device using a circuit switched network address associated with the client device and wherein the circuit switched network address is a mobile identification number associated with the client device (page 5, 55<sup>th</sup> – 56<sup>th</sup> paragraphs, that the server 30 connects to the Short Message Service Center (SMS-C) and submits a request to the SMS-C 40 to transmit an SMS short message to a GPRS mobile station 20 having a particular Mobile Station Integrated Services Digital Network (MSISDN) number).

With respect to claim 10, Johansson discloses that wherein the client device is further configured to receive the circuit switched message from the central authority and send a packet switched registration message through the packet switched data network to the central authority in response to the received circuit switched message (Fig. 2, arrows 2 and 4).

With respect to claim 14, Johansson discloses a shared secret that is shared between the client device and the central authority, wherein the shared secret is used for authentication (page 5, 56<sup>th</sup> paragraph, that the SMS message could include an activate code and if the code corresponds to a predefined code which is accepted by the application, the application processing proceeds).

With respect to claim 15, Johansson discloses that wherein the central authority is further configured to encrypt the circuit switched message sent to the client device using the shared secret (page 5, 56<sup>th</sup> paragraph, that the SMS message includes an activate code and if the code corresponds to a predefined code which is accepted by the application, the application processing proceeds).

With respect to claim 16, Johansson discloses that wherein the central authority comprises a random or pseudo-random number generator and wherein the circuit switched message sent to the client device includes a random or pseudo-random number generated by the random or pseudo-random number generator (page 5, 56<sup>th</sup> paragraph, that the SMS message could include an activate code and if the code corresponds to a predefined code which is accepted by the application, the application processing proceeds).

With respect to claim 17, Johansson discloses that wherein the central authority is further configured to encrypt the circuit switched message sent to the client device using a random or pseudo-random number generator by the random or pseudo random number generator (page 5, 56<sup>th</sup> paragraph, the SMS message could include an activate code and if the code corresponds to a predefined code which is accepted by the application, the application processing proceeds).

With respect to claims 18 and 42, Johansson discloses that wherein the client device is further configured to receive the circuit switched message sent by the central authority and to



decrypt the circuit switched message (page 5, 56<sup>th</sup> paragraph that if the activation code is present, the application extracts the payload of the SMS message and examines the request).

With respect to claims 19 and 43, Johansson discloses that wherein the client device is further configured to extract a random or pseudo-random number from a decrypted circuit switched message received from the central authority (page 5, 56<sup>th</sup> paragraph that if the activation code is present, the application extracts the payload of the SMS message and examines the request), and wherein the client device is further configured to generate a packet switched registration message in response to the received circuit switched message (Fig. 2, arrow 4).

With respect to claims 20 and 44, Johansson discloses that wherein the client device is further configured to encrypt the packet switch registration message using the random or pseudo-random number extracted from the decrypted circuit switched message (page 6, 59<sup>th</sup> paragraph, that the recognition is based on information which the GPRS station 20 has included in the response message, e.g., the MSISDN or a request code originally generated and included in the request by the server application).

With respect to claims 21 and 45, Johansson discloses that wherein the client device further comprises an authentication factor and wherein the client device is further configured to include the authentication factor in the packet switched registration message sent to the central authority (page 6, 59<sup>th</sup> paragraph, that the recognition is based on information, which the GPRS

station 20 has included in the response message, e.g., the MSISDN or a request code originally generated and included in the request by the server application).

With respect to claims 22-23 and 46-47, Johansson discloses that the authentication factor is an electronic serial number associated with the client device or a mobile identification number associated with a client device (page 6, 59<sup>th</sup> paragraph, that the recognition is based on information, which the GPRS station 20 has included in the response message, e.g., the MSISDN).

With respect to claim 24, Johansson discloses that wherein the central authority is further configured to receive a packet switched registration message from the client device in response to the circuit switched message sent to the client device, and wherein the central authority is further configured to extract an authentication factor from the packet switched registration message received from the client device (page 6, 59<sup>th</sup> paragraph).

With respect to claim 40, Johansson discloses that configured to include a packet switched network address with a packet switched registration message sent to the central authority (page 6, 58<sup>th</sup> paragraph and Fig. 2, the GPRS application prepares a response message to be transmitted to the server 30. The response message is transmitted over the established TCP/IP connection. Herein, the response message included the allocated IP address of the wireless communication station 20 when it activates a PDP context).

3. Claims 13 and 25-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johansson et al (US Pub 2002/0089968 A1) in view of Mohammadioun et al (US Pub 2005/0050148 A1). Hereinafter, referred to as Johansson and Mohammadioun.

With respect to claims 13 and 25, Johansson discloses a communication system (Fig. 2), comprising:

a circuit switched network (Fig. 2, circuit-switched connection between wireless communication 20 and SMS-C 40);

a packet switch data network configured to assign network addresses in a dynamic fashion (page 6, 57<sup>th</sup> paragraph and Figs. 1-2, the application requests the GSM/GPRS network 10 to activate a packet data service to be used by the GPRS station 20 and then receives a dynamically allocated IP address from GSM/GPRS network 10 via GSM/GPRS network);

a client device configured to send and receive packet switched and circuit switched communications over the packet switched data network and the circuit switched data network, respectively (Fig. 2, wireless communication station 20); and

a central authority configured to send a circuit switch message to the client device through the circuit switched data network requesting that the client device register with the central authority through the packet switch data network (page 5, 55<sup>th</sup> – 56<sup>th</sup> paragraphs, the server 30 connects to the Short Message Service Center (SMS-C) and submits a request to the SMS-C 40 to transmit an SMS short message to a GPRS mobile station 20 having a particular Mobile Station Integrated Services Digital Network (MSISDN) number. The SMS-C 40 sends an SMS message to the GPRS station 20 through the GSM/GPRS network 10 over a GSM signaling channel. Herein, the GSM signaling channel is a circuit-switched signaling channel),

Johansson does not disclose that the central authority is further configured to send a new circuit switch message to the client device if the client device has not communicated with the central authority for a predetermined time.

Mohammadioun discloses that the server determines again if it has the capability to reestablish a link to the client on the remote device currently being registered by sending another message (Fig. 4, step 135) after the first message (Fig. 4, step 129) (page 7, 71<sup>st</sup> and 73<sup>rd</sup> paragraphs and Fig. 4. Herein, the remote device is not communicating with the server for a predetermined time).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include the feature of resending message to the client device if no communications taking place in Johansson's system, as suggested by Mohammadioun, to verify that whether the connection of the registered device is still active or not after a predetermined period of time.

With respect to claim 26, Johansson discloses that wherein the circuit switch message sent to the client device is a short message service message (Fig. 2, SMS short message is used as a request).

With respect to claim 27, Johansson discloses that wherein the central authority is further configured to receive a packet switched registration message from the client device in response to the circuit switched message sent to the client device (page 6, 58<sup>th</sup> paragraph and Fig. 2, arrow

4, the GPRS application prepares a response message to be transmitted to the server 30. This response message is now transmitted over the established TCP/IP connection).

With respect to claim 28, Johansson discloses that wherein the central authority is further configured to extract a packet data network address associated with the client device from the packet switch registration message received from the client device (page 6, 59<sup>th</sup> paragraph, the server application extracts and analyses the included information in the response message. Herein, the message is TCP/IP message therefore it includes the allocated IP address of the GPRS station 20 when it activates a PDP context).

With respect to claim 29, Johansson discloses that wherein the central authority comprises a database configured to store information related to the client device and wherein the central authority is configured to update the data stored in the database based on the information contained in the received packet switched registration message (Fig. 2, the server 30 includes memory 33 and 34 for storing information relating to the GPRS station 20, including any updated network address of the GPRS station 20).

With respect to claim 30, Johansson discloses that wherein the central authority is further configured to update the information stored in the database on the packet data network address extracted from the received packet switch registration message (page 6, 59<sup>th</sup> paragraph and Fig. 2, the server application extracts, analyses, and stores the included information in the response message in server's memory).

With respect to claim 31, Johansson discloses that wherein the central authority is further configured to send a message to the client device using the packet data network address stored in the database (Fig. 1, the server 30 sends a request to the GPRS station 20 via TCP/IP connection 1. Herein, the server already knows the network address of the GPRS station 20 as stored in its database 33 and 34).

With respect to claims 32-33, Johansson discloses that wherein the central authority is further configured to send the circuit switched message to the client device using a circuit switched network address associated with the client device and wherein the circuit switched network address is a mobile identification number associated with the client device (page 5, 55<sup>th</sup> – 56<sup>th</sup> paragraphs, that the server 30 connects to the Short Message Service Center (SMS-C) and submits a request to the SMS-C 40 to transmit an SMS short message to a GPRS mobile station 20 having a particular Mobile Station Integrated Services Digital Network (MSISDN) number).

With respect to claim 34, Johansson discloses a shared secret that is shared between the client device and the central authority, wherein the shared secret is used for authentication (page 5, 56<sup>th</sup> paragraph, that the SMS message could include an activate code and if the code corresponds to a predefined code which is accepted by the application, the application processing proceeds).

With respect to claim 35, Johansson discloses that wherein the central authority is further configured to encrypt the circuit switched message sent to the client device using the shared secret

(page 5, 56<sup>th</sup> paragraph, that the SMS message includes an activate code and if the code corresponds to a predefined code which is accepted by the application, the application processing proceeds).

With respect to claim 36, Johansson discloses that wherein the central authority comprises a random or pseudo-random number generator and wherein the circuit switched message sent to the client device includes a random or pseudo-random number generated by the random or pseudo-random number generator (page 5, 56<sup>th</sup> paragraph, that the SMS message could include an activate code and if the code corresponds to a predefined code which is accepted by the application, the application processing proceeds).

With respect to claim 37, Johansson discloses that wherein the central authority is further configured to encrypt the circuit switched message sent to the client device using a random or pseudo-random number generator by the random or pseudo random number generator (page 5, 56<sup>th</sup> paragraph, the SMS message could include an activate code and if the code corresponds to a predefined code which is accepted by the application, the application processing proceeds).

With respect to claim 38, Johansson discloses that wherein the central authority is further configured to receive a packet switched registration message from the client device in response to the circuit switched message sent to the client device, and wherein the central authority is further configured to extract an authentication factor from the packet switched registration message received from the client device (page 6, 59<sup>th</sup> paragraph).

4. Claims 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johansson and Petty further in view of Lane (US Patent No. 6,866,587 B1). Hereinafter, referred to as Johansson, Petty and Lane.

With respect to claims 48, 49, and 50, Johansson and Petty have addressed all the claimed limitations as recited in independent claims 1 and 39. Johansson does not disclose that the client device is configured to transmit a power-down message to the central authority over the packet switched data network upon the initiation of a power down sequence of the client device and wherein the central authority is further configured to transmit an acknowledgement to the client device over the packet switched data network, upon receiving the power down message from the client device. Lane discloses that if the client is shutting down completely, it sends the server 102, a client shutdown notification (col. 12, lines 25-27) via the packet switched data network (Fig. 1, network 106). If a client shutdown notification is received 510, the thread acknowledges the message by sending an acknowledgement to the client 511 (col. 12, lines 27-30 and Fig. 5A) via the packet switched data network (Fig. 1, network 106). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the features of sending the shutdown notification and acknowledging the shutdown notification in Johansson's system, as suggested by Lane, thereby the server does not waste time and bandwidth for locating powerless client devices.

#### ***Response to Arguments***

5. Applicant's arguments filed October 31, 2007 have been fully considered but they are not persuasive.



Applicants argue in pages 2 and 3 that Johansson does not relate to activities occurring after a connection is established. Accordingly, Applicants again submit that this cited reference constitutes non-analogous art. Examiner respectfully disagrees. Johansson discloses that the adapted information content, either reduced or expanded, is then packetized and transmitted as packet data to the GPRS station 20 (page 4, 45th paragraph. Herein, Johansson discloses an occurrence of a data transmission after a connection is established). Further, independent claim 1 does not recite activities occurring after a connection is established as argued by the Applicants. Specifically, claim 1 recites "send a new packet switched registration message whenever the packet switched data network assigns the client device a new packet switched network address". Herein, a new address can be assigned to the client, even in the idle mode, when a connection disrupted, regardless of any activities.

Applicants further argue in page 3 that there is no motivation to combine the cited references since the cited reference, Petty, is unrelated to the present application. Petty describes an internet call waiting service that allows callers to screen voice messages in real-time to either terminate or re-route the call. Examiner once again respectfully disagrees. First of all, Johansson and Petty disclose the use of an IP address for call routing. Johansson discloses all of the limitations as recited in independent claims except sending a new registration message when the network assigns the client device a new address. Petty discloses that if the client computer loses Internet connectivity during a session, as soon as the Internet connection has been re-established, the server is updated with the new IP address by the client (page 4, 38th paragraph. Herein, the client sends an update to the server with a new IP address whenever the client loses a connection and re-establishes with the newly assigned IP address. This is equivalent to

“whenever the packet switched data network assigns the client device a new packet switched network address” because, in this context, the client device only updates the new address to the server whenever the client device is assigned with a new address from a network due to lost of a connection).

Applicants further argue in page 4 that even if the references could be combined, there is no teaching or suggestion to do so as provided by the cited references. Examiner respectfully disagrees. As is known in digital communications, it is very important to update the address of a device, when the device moves around in different zones or cells, to reduce the set up time and keep the transmissions synchronously and smoothly. Therefore, one having ordinary skilled in the art would reasonably combine the teachings to Johansson and Petty to update a newly assigned IP address when a connection disrupted.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh-Vu H. Ly whose telephone number is 571-272-3175. The examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to be 'Avl', is written over the end of the previous paragraph.

avl